of storage devices; wherein said balancing is based at least in part on said determined maximal total number of viewers per storage device or per partitioned group of storage devices, and said determined maximal aggregated consumption rate per storage device or per partitioned group of storage devices.

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170. The system of claim 169, wherein said I/O resource manager is capable of performing I/O admission control, determining read-ahead size, or a combination thereof; wherein said performance of I/O admission control and determination of read-ahead size are based at least in part on said determined maximal total number of viewers per storage device or per partitioned group of storage devices, and said determined maximal aggregated consumption rate per storage device or per partitioned group of storage devices.

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171. The system of claim 170, wherein said I/O resource manager is capable of performing I/O admission control by determining whether or not a capacity of said system is sufficient to support at least one additional viewer based at least in part on said balancing of said I/O capacity with said buffer memory space.

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172. The system of claim 170, wherein said resource manager is capable of determining read-ahead size by setting a cycle time based at least in part on said balancing of said I/O capacity with said buffer memory space; and determining a number of read ahead data blocks based at least in part on said cycle time, determined maximal aggregated consumption rate per storage device or per partitioned group of storage devices, and a size of said data blocks.

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173. The system of claim 170, wherein said resource manager is capable of performing said I/O admission control by determining whether or not a capacity of said system is sufficient to support at least one additional viewer based at least in part on said balancing of said I/O capacity with said buffer memory space; and wherein said method further comprises determining read-

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ahead size by setting a cycle time based at least in part on said balancing of said I/O capacity with said buffer memory space; and determining a number of read ahead data blocks based at least in part on said cycle time, determined maximal aggregated consumption rate per storage device or per partitioned group of storage devices, and a size of said data blocks.

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174. The system of claim 161, wherein said storage system workload monitor is capable of monitoring the following system I/O performance characteristics for each logical volume, for each plex within a logical volume, and for each storage device or partitioned group of storage

10 devices within a plex: (1) total number of viewers, (2) aggregated data consumption rate, (3) current weight of workload on a storage device in a plex, and (4) number of outstanding I/O requests for each storage device or partitioned group of storage devices.

15 175. The system of claim 161, wherein said storage system workload monitor is capable of determining a workload weight distribution for each of said storage devices or partitioned group of storage devices based at least in part on said monitored number of outstanding I/O requests for each storage device or partitioned group of storage devices.

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